(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
17 September 2009 (17.09.2009)

PCT

(10) International Publication Number
WO 2009/111996 A1

(51) International Patent Classification:
G08B 25/00 (2006.01) *G08B 25/14* (2006.01)
G08B 25/08 (2006.01)

(21) International Application Number:
PCT/CZ2009/000035

(22) International Filing Date:
4 March 2009 (04.03.2009)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PV 2008-162 14 March 2008 (14.03.2008) CZ

(71) Applicant *(for all designated States except US)*: **BARCO, S.R.O.** [CZ/CZ]; Okruzni 741, Uherske Hradiste, PSC 68605 (CZ).

(72) Inventor; and

(75) Inventor/Applicant *(for US only)*: **PIPAL, Miroslav** [CZ/CZ]; Za Skolou 834, Buchlovice, PSC 68708 (CZ).

(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

— *as to the identity of the inventor (Rule 4.17(i))*

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *of inventorship (Rule 4.17(iv))*

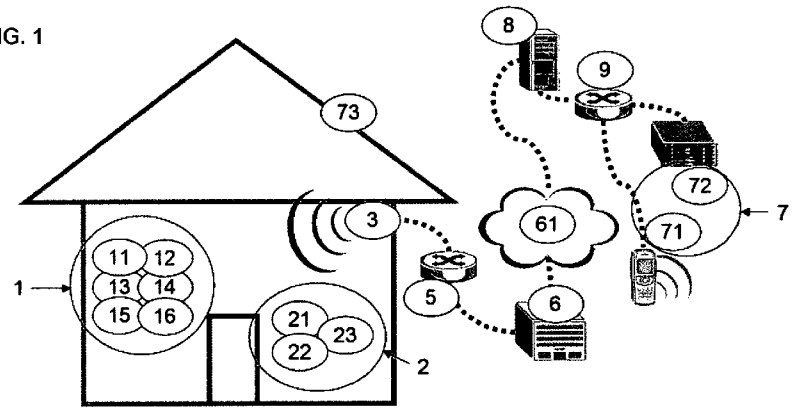
Published:

— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

(54) Title: WIRELESS SECURITY SYSTEM WITH CONTROL PANEL AS A WEB APPLICATION

FIG. 1



(57) Abstract: Wireless security system comprises at least one intrusion detector and at least one arming/disarming device, where principle of operation is in the fact, that detectors and arming/disarming devices are conected through local wireless access point and internet connectivity direct to web application on web server. Web application on web server communicates direct with detectors and arming/disarming devices, provides all control panel functionality and is equiped with communication interface for alarm transmission to receiving party.

WO 2009/111996 A1

WIRELESS SECURITY SYSTEM WITH CONTROL PANEL AS A WEB APPLICATION

TECHNICAL FIELD

The invention relates to a security system of buildings, flats and other similar premises which includes at least one wireless WiFi intrusion detector and at least one arming/disarming device.

BACKGROUND ART

At present security systems make use of facilities whose basic component is a control panel connected to particular intrusion detectors via hardwire or wireless connection.
A keypad for controlling and programming the whole system is also included as well as a siren or other warning device in a general way. All these components are installed straight in the protected property. The control panel evaluates intrusion signals from detectors and based on system configuration it causes alarm condition by sounding the siren; and/or by message transmission addressed to the owner or to the central monitoring via telephone network. Therefore the basic component of the whole system is the central panel device and as late as this central panel is connected through the communicator to the receiving party.

The disadvantage of this solution are financial costs and the system complexity because the control panel and its required communicator to receiving party is the most expensive component of the electronic security system. This results in utilization of these security systems firstly in business environments while residential customers are a minority, especially in case of systems connected to the central monitoring.

The object of the invention is to provide a system making use of contemporary information technologies, with affordable price and more efficiency particularly for residential customers and small business environments.

DISCLOSURE OF THE INVENTION

The object mentioned above can be reached by a security system making use of at least one wireless WiFi intrusion detector and at least one arming/disarming device. The principle of the system is following: detectors and arming/disarming devices are connected via local wireless access point and internet connectivity directly to the web server equiped with a communication interface for interaction with the receiving party.
The receiving party may be a mobile telephone and/or central monitoring and/or a siren.
According to the level and the kind of security the intrusion detector may be a motion detector (PIR) and/or a glassbreak detector and/or a gas leak detector and/or a fire detector and/or a water flood detector and/or a magnetic detector.
The arming /disarmig device may be a keypad and/or arming /disarmig tag and/or mobile electronic device.

The main benefit of the security system based on this invention constitutes the substantial simplification of its installation and configuration, significant cost reduction of the equipment required and the opportunity of providing the electronic security system services to homeowners. Intrusion detectors are long life battery-powered devices with ultra low-power consumption and very easy installation. After purchasing intrusion detectors, their installation, registration to the web application on the web server and configuration for the required security the system is ready to use. Services making use of this system may be provided by specialized security systems providers, web portal operators or mobile phone network operators. Compared to existing security systems the most expensive part of the system – the control panel with its communicator - is moved to the sevice provider and it has a form of a web application running on the server. This application provides realiable web services directly to particular detectors and arming/disarming devices installed in customer's property.

BRIEF DESCRIPTION OF DRAWINGS

The security system based on the invention is described more closely through an example of implementation with the help of the schematic drawing attached.

BEST MODE FOR CARRYING OUT THE INVENTION

As an example of the security system was chosen example of a system with relatively complex detection of different kinds of intrusion. The intrusion detector 1 involves: a motion detector (PIR) 11, a glassbreak detector 12, a gas leak detector 13, a fire detector 14, a water flood detector 15 and a magnetic detector 16. The system also includes arming /disarmig devices 2 such as system control keypad 21, arming/disarming tags 22, mobile electronic device 23. As an arming /disarmig device 2 may be chosen any mobile device equiped with WiFi communication interface if equipped with corresponding software. All these detectors 1 and arming /disarmig devices 2 are connected via local wireless access point 3 ,via connectivity 5 of internet provider 6 to the internet network 61 and web server 8 with web application which functions as the control panel of the security system. The web server 8 is equiped with the communication interface for interaction with the receiving party 7 which is represented by a mobile phone 71, central monitoring 72 and a siren 73 in the protected object in this implementation example.

The application and function of this security system suppose the existence of a home wireless WiFi network with at least one access point 3 which provides the internet connectivity for all devices within the wireless signal coverage area. The primary purpose of the access point 3 is to distribute the internet connectivity from its source (e.g. ADSL, cable TV, wireless access) to all devices in the household (like computer and consumer electronics) within its signal coverage area.

Arming/disarming of the security system is executed through the arming /disarmig device 2, e.g. pressing the button on the arming/disarmig tag 22 or the absence/presence of the tag within wireless signal coverage area of the access point 3. The security system is disarmed if arming/disarming tag 22 is within the signal coverage area of the access point 3. The system is armed if the tag 22 is out of the signal coverage area of the access point 3. The arming /disarmig tag 22 can have a form of a key case or it can be placed inside a car. Thereafter the security system can be armed/disarmed automatically when the owner comes to/leaves the protected property. The other way of arming/disarming the system is entering a personal PIN on the system control keypad

21. This keypad 21 interacts directly with the web application on the web server 8 via internet connection 5 and the access point 3.

Third way of arming/disarming the system is using a electronic device 23 equipped with a WiFi communication interface with a software installed for providing the arming/disarming function. In this case the system is armed/disarmed automatically when the owner equipped with this electronic device 23 comes to/leaves the protected property or he can manually run the software command from the mobile electronic device, such as mobile phone 71 or personal digital assistante (PDA).

If intrusion detection of the protected property occurs, the signal from the particular intrusion detector 1 is transmitted via access point 3 and the internet 6 to the web server 8. After the signal evaluation the web server 8 transmits back a command to sound the siren 73 and a message about intrusion is sent through the communication interface 9 to the mobile phone 71 eventually central monitoring 72.

INDUSTRIAL APPLICABILITY

The security system based on this invention with detection of different kinds of intrusion may be utilized especially for residential customers or small business environments.

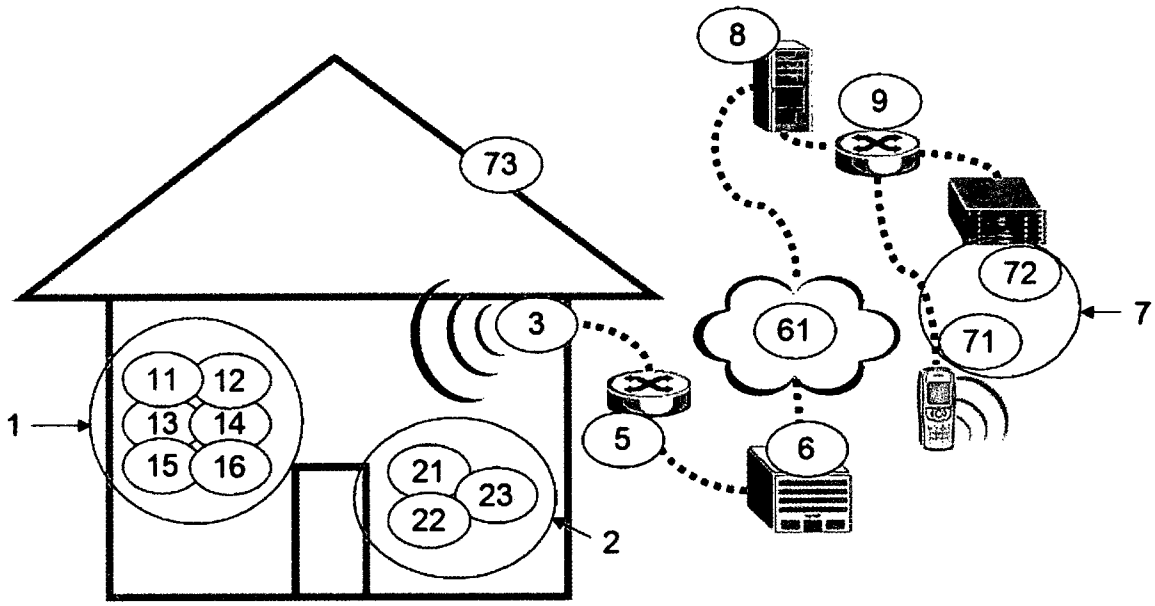
CLAIMS

1. The security system including at least one wireless WiFi intrusion detector, wherein intrusion detectors (1) and arming/disarming devices (2) are connected via local wireless access point (3), internet provider (6), internet network (61) to web server with web application (8) equipped with the communication interface (9) for interaction with the receiving party (7).

2. The security system according to claim 1, wherein the receiving party (7) is a mobile phone (71) and/or a central monitoring (72) and/or a siren (73).

3. The security system according to claim 1, wherein the intrusion detector is a motion detector (11) and/or a glassbreak detector (12) and/or a gas leak detector (13) and/or a fire detector (14) and/or a water flood detector (15) and/or a magnetic detector (16).

4. The security system according to claim 1, wherein the arming /disarmig device (2) is a keypad (21) and/or arming /disarmig tag (22) and/or mobile electronic device (23).


8
9
73
72
7
3
61
71
11
12
13
14
15
16
1
5
6
21
23
22
2

INTERNATIONAL SEARCH REPORT

International application No
PCT/CZ2009/000035

A. CLASSIFICATION OF SUBJECT MATTER
INV. G08B25/00 G08B25/08 G08B25/14

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G08B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 2006/087443 A1 (LOVRIC IVAN [FR]) 24 August 2006 (2006-08-24)	1-3
Y	page 11, lines 13-15 page 12, lines 22-26 page 13, line 36 - page 14, line 32 page 15, line 19 - page 16, line 29 page 17, lines 6-11 page 19, lines 31-34 page 20, lines 16-17 page 21, lines 13,14,17-20 claims 13,14,16,18 figures 2,3,5	2,4

-/--

[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
5 August 2009	12/08/2009

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Meister, Mark

Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/CZ2009/000035

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	US 2003/202101 A1 (MONROE DAVID A [US] ET AL) 30 October 2003 (2003-10-30) paragraph [0084] paragraphs [0087] - [0089] paragraphs [0133], [0134] figure 1	1-2,4 2,4
X Y	US 2006/136972 A1 (METZGER RAYMOND [US] ET AL) 22 June 2006 (2006-06-22) paragraph [0048] paragraphs [0050], [0051] paragraph [0070] paragraphs [0091] - [0095] paragraphs [0220], [0221] paragraphs [0359] - [0361] paragraph [1081] paragraphs [1090], [1091] figures 4,9	1-4 2,4
Y	US 2005/242948 A1 (TARR JEFF [US]) 3 November 2005 (2005-11-03) paragraphs [0027], [0028] paragraphs [0033] - [0035] figure 3	2
Y	WO 2007/032731 A1 (ERICSSON TELEFON AB L M [SE]; YEUNG PETER [SE]; LI PING [SE]) 22 March 2007 (2007-03-22) paragraphs [0018] - [0022] paragraphs [0027] - [0030] paragraphs [0033] - [0035] paragraph [0038] paragraphs [0040] - [0043] paragraph [0047] figures 1,3	4
Y	US 2003/025603 A1 (SMITH EDWIN DEREK [US]) 6 February 2003 (2003-02-06) paragraphs [0006] - [0008] paragraph [0014]	4
Y	US 2006/064505 A1 (LEE ALBERT [US] ET AL) 23 March 2006 (2006-03-23) paragraphs [0002] - [0004] paragraph [0015] paragraphs [0017], [0018] paragraph [0021] paragraphs [0023] - [0025] figure 1	4
A	US 2004/205824 A1 (TSAI JAMES [TW]) 14 October 2004 (2004-10-14) the whole document	1-4

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/CZ2009/000035

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2006087443 A1	24-08-2006	EP 1854262 A1	14-11-2007
		US 2008211906 A1	04-09-2008
US 2003202101 A1	30-10-2003	NONE	
US 2006136972 A1	22-06-2006	NONE	
US 2005242948 A1	03-11-2005	NONE	
WO 2007032731 A1	22-03-2007	GB 2441929 A	19-03-2008
US 2003025603 A1	06-02-2003	WO 03012665 A1	13-02-2003
US 2006064505 A1	23-03-2006	CA 2579625 A1	30-03-2006
		CN 101065977 A	31-10-2007
		EP 1803305 A2	04-07-2007
		WO 2006033760 A2	30-03-2006
US 2004205824 A1	14-10-2004	NONE	